

DEPRAG

Operating Instructions

Drill Spindle

104-030-1

302895 A

DEPRAG

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CERTIFIED AS PER DIN EN ISO 9001

Dec-03 Technical alterations reserved

Dear Customer:

Congratulations, you chose the enclosed tool from an extensive DEPRAG product line. This tool is the result of more than 60 years experience in the design and manufacturing of pneumatic tools for the industrial market. We offer a complete program of pneumatic tools, such as Drills, Tappers, Grinders, Screwdrivers, Impact Wrenches, MetalWorking Tools and Hammers.

Please don't hesitate to call on us for all of your assembly tool needs, from individual hand tools to the complete automated screwdriving cell. Our products offer solutions to all requirements, which may be needed in the assembly sector. We kindly ask, that you read these operating instructions carefully, so that you will be able to use this tool safely and for many years to come. If you need additional information, please contact your DEPRAG Representative or contact us direct at DEPRAG. We will be happy to answer any questions. We hope you will be pleased with your new tool!

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10. All important data at a glance

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Technical Data:

Model No. :	104-030-1
Order No.	302895 A
Drilling into Steel, up to Ø mm	4
Drilling into Aluminum, up to Ø mm	4,8
Speed, (min ⁻¹):	20000
Air Consumption, m ³ /min	0,36
Power Output, kW	400
Weight kg.	0,685
Hose I.D. mm	10
Connection Thread	G 1/4 a
Noise Level: dB(A)	80
Vibration m/s ²	<2,5



Before operating tool, make sure to carefully read and observe this operating instruction booklet.

1. Safety Tips

When using a drill spindle, make sure to apply the following basic safety measurements to protect against an electrical short, injury- or fire hazards!

1. Disorder in the work-area yields accident-danger!
2. Don't expose the drill spindle to rain. Provide good illumination. Don't use the drill spindle in close proximity of combustible liquids or gases.
3. Unused tools should be stored in dry, locked area.
4. Use specified drill-inserts only. Test and make sure that the rated speed of the drill-insert is higher than the speed of the drill-spindle.
5. Do **not** alter either drill-spindle or drill-inserts after their delivery!
6. Do not drill nearby inflammable materials or in explosion-endangered areas.
7. Always provide clean air to work facility, if the tool is being used in an unhealthy or explosive environment and if steams or aerosols occur.
8. Observe labeling-, operational restrictions and special application-tips, such as „hearing-protection“, etc.
9. Always sufficiently secure work pieces prior to any operation.
10. Before each operation, visibly check drill-inserts and drill-spindle and assure their intactness and suitability for the application.
11. During the disconnection or reconnection of the drill spindle from the compressed air, an injury is possible because of a whipping pressure-hose. Additionally, it is imperative **NOT** to operate or to press the start-lever.
12. Before setting aside the hand drill, make sure the drill is switched off and has come to a full stand still.
13. The DEPRAG drill-spindle is only allowed to be operated when connected to a maintenance-unit, consisting of Filter, Regulator and Oiler (approximately 1 – 2 drops per m³). A performance loss (approximately 15%) occurs, when drill-spindle is operated with oil free air und reduced maintenance interval are necessary. The air-pressure may **NOT** exceed 7 bar.

14. Only operators with product understanding, educated by authorized and responsible specialists, may operate the drill-spindle.
15. With drill-spindles it is necessary to make sure, that the operator wears goggles, gloves, hearing-protection, safety-shoes and a hairnet if operator has long hair.
16. Wear no loose clothing or jewelry, for movable parts may seize them.
17. Use a respiratory mask, if operation generates dust.
18. The drill-spindle should be used exclusively for its designated purpose.
19. We or an authorized specialist may only do the dismantling as well as the reassembly of our DEPRAG drill-spindles.

2. Installation

Blow out air hose before connecting it to the drill.

- Connect to a maintenance unit, filled with resin- and acid-free oil (SAE 10. DEPRAG-Oil 790081 A, 250 cm³) and adjust oiler (1 - 2 drops/min³).
- The air pressure should be 6 bar (85 PSI). A pressure below 85 PSI reduces tool performance. If air pressure is above 85 PSI, install a regulator
- Make sure the hoses allow unrestricted airflow, avoid bends, etc.

In regards to air-quality according to ISO8573-1, we recommend:

	Class	Residue of Oil Content mg/m ³	Residue of Dust μ mg/m ³		Residue of Water DTP g/m ³	
Lubricated Air	4	5	15	8	+3	6
Dry Air	3	1	5	5	-20	0,88

minimum Hose ID: 6 mm = ¼"
maximum hose length: 2 m (6.6 ft.)

3. Application Possibilities

The Drills 104-X257/S are designed for drilling into steel and aluminum, as well as other material.

4. Handling

The tool should only be used when in perfect working condition; in accordance to its designated use and only when all safety- and danger recommendations of the operating instruction booklet are observed. Any malfunction, which would result into injury to an operator, has to be immediately removed. It is required to use safety goggles when operating this drill. To wear safety gloves is recommended.

8. EG-Declaration of Manufacturer

**EC-Declaration of Manufacturer
in accordance with the CE-Machine-Guideline 98/37/EG, appendix II B**

DEPRAG SCHULZ GMBH u. CO.
P.O. Box 1352

92203 Amberg, Germany

declares, that the construction of

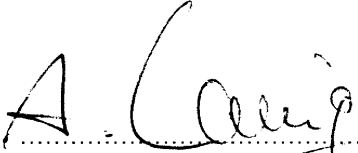
Drill Spindle

104-030-1

is appointed to the assembly with another machine and the start of operation of this other machine is prohibited until it is proved that it is in accordance with the CE-Machine-Guideline i.d. F.98/37/EG.

used standards
- EN 292

Amberg, 18.12. 2003


Dipl. Ing. (FH) A. Lanig
Mr. Design Dept.

7. Inspection and Maintenance

These drills require little maintenance. If the following rules are observed, the tool reaches its promised high life span and remains in a safe condition to use. Check the air filter (exhaust filter condensation on a regular basis) and the oil reservoir, as well as the oiler adjustment (we recommend DEPRAG-Oil, Part No. 790081 A (250 cm³).

Lubrication: approx. 1 - 2 Drops per 1 m³ air consumption Only when repairing, wash and grease ball bearings and gearing (we recommend Grease: Aral HL2, BP Energrease LS2, Esso Beacon2, or Shell Alvania 2. Any other comparable lithium soap grease may be used.

Wear parts: Vanes (4 pieces) part no. 326953/3.

7.1 Trouble Shooting

Error	Reason	Solution
Insufficient Power	Restriction in air hose	Remove bends or other restrictions
	Air pressure too low	Minimum air pressure should be 90 PSI for maximum performance
	Hose I.D. is too small	Use required hose I.D.
	Siebträger oder Schalldämpfer verschmutzt	Siebträger, bzw. Schalldämpfer austauschen oder reinigen
Drill does not start	Vanes are worn	Exchange vanes
	No air, Shut-Off valve is closed	Open Shut-Off valve
	Vanes are worn	Exchange vanes
Tool does not stop	Valve Bottun or Valve Disc inhibited	Exchange Valve Bottun or Valve Disc

5. Operation

Mounting of Drill-Insert:

Place drill-insert into collet 312694 and tighten it.

Connection:

Connect Hose (1/4" ID) to the gear support 314455. Open shut-off valve (operating pressure = 90 PSI). Use only designated inserts with correct shaft-diameter.

Attention:

Make sure to use inserting tools with correct shaft diameter only. Also their permitted number of rotations must be higher than the one of the drill (20000 min⁻¹).

6. Assembly - Disassembly

Use DEPRAG spare parts only. Non-DEPRAG parts may cause a performance reduction and will increase maintenance requirements. If Non-DEPRAG parts are used, DEPRAG is released from all product- and safety liabilities.

Note:

Disconnect drill from air supply.

Disassembly:

Use wrench AF 32 in order to loosen screw joint 314416/1. Push all the motor parts towards the connection side out of the motor housing 302894. Remove intermediate ring 302229, ball bearing 802004 and bearing cover 326960. Check vanes 326953/3: minimum width: 8 mm. Make sure to exchange vanes which are too small or damaged.

Assembly

Assemble the tool in reverse order.

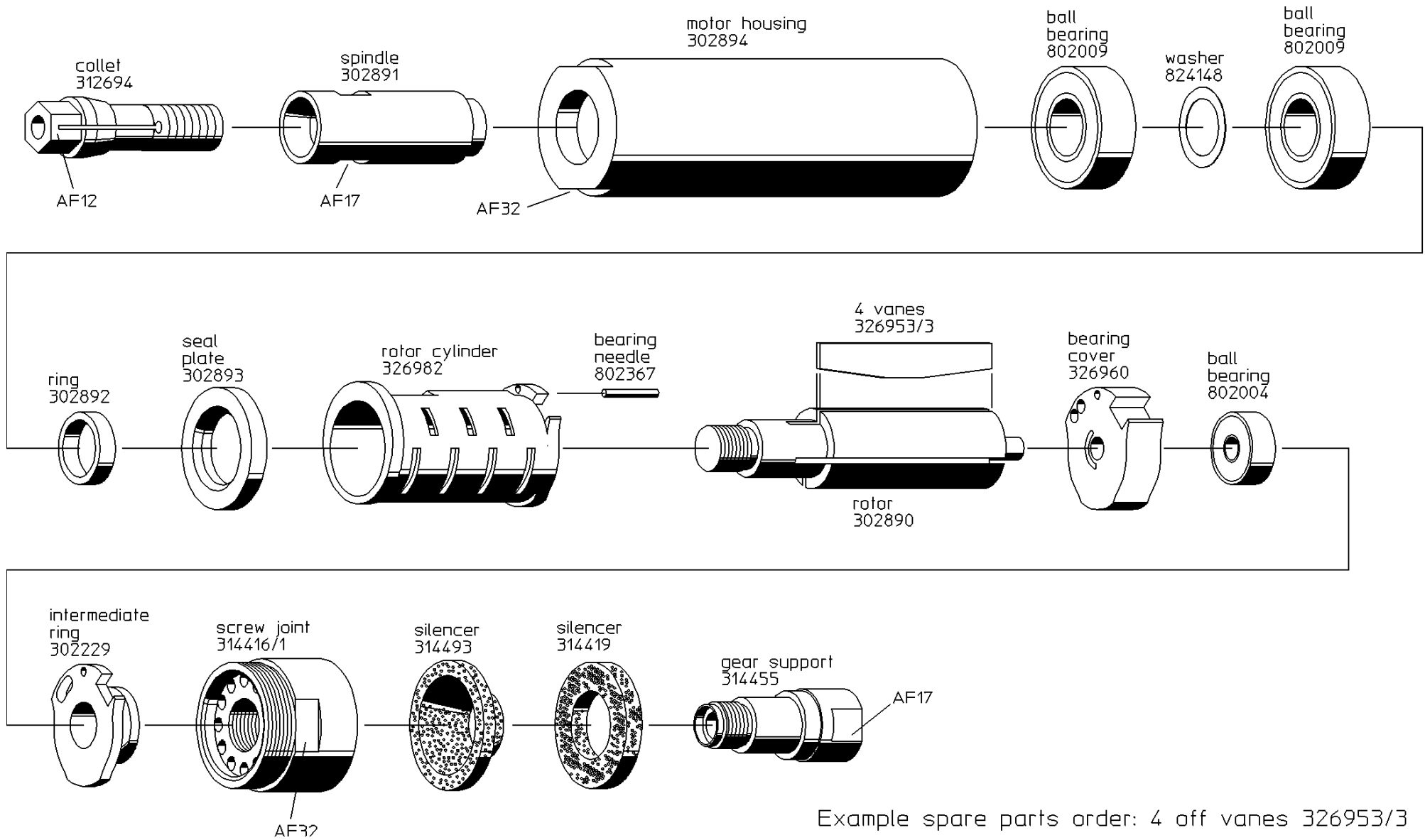
Always test smoothness of operation and speed (see technical data) after maintenance!

Special Repair Tools (Optional Equipment): See leaflet D090

Tachometer 807416 (measuring range: 40.000 to 50.000 rpm)

6.1 Spare Parts Listing

See Pages 5/6, Picture 1



Example spare parts order: 4 off vanes 326953/3

Picture 1: Spare Parts Listing